

# Glossary of Energy-Consuming Equipment



*To help you complete the Energy All-Star Checklist, this glossary provides descriptions of the types of energy-consuming equipment used in building spaces, some of which you might not be familiar with. Most descriptions are accompanied by graphic representations of what the equipment looks like. The entries are organized to correspond to Sections 2-5 of the Energy All-Star Checklist by order of appearance within those sections.*

## Section 2: Lighting System Equipment

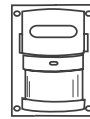


**Incandescent light bulbs** are the traditional screw-in light bulbs derived from Thomas Edison's work before the turn of the century. Less than 5 percent of electricity consumed by them is turned into useful light.

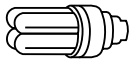


**Lighting system timers** are programmable timers that will turn lighting on and off according to a schedule you set, reducing the tendency to leave lights on during non-operating hours.

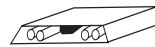
**Incandescent lamps** are desk lamps that use incandescent light bulbs.



**Occupancy sensors** use ultrasonic or infrared sensors to detect people, turning the lights off after a few minutes of inactivity in a room, and turning the lights on when people enter a room.



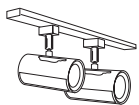
**Compact fluorescent lamps** are fluorescent lamps that have been specifically made in a compact form and are designed to replace incandescent light bulbs in traditional screw-in fixtures. Compact fluorescents are 4 times as efficient as incandescents and normally last 10 times as long. When used with reflectors, compact fluorescent fixtures provide an excellent substitute for floodlamps.



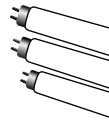
**Fluorescent lamps** are the common tubular lamps found in most office and floor spaces. They are usually three to four times more efficient than incandescent lamps and can last 8 to 20 times longer. **Delamped fluorescent fixtures with reflectors** are ceiling fixtures that use reflectors to increase the amount of light beamed downward per lamp, thereby reducing the number of fluorescent lamps needed to light a room. Delamping usually involves removing two of four lamps from a fixture.



**Halogen lamps** are a type of incandescent lamp that is about twice as efficient as regular incandescent lamps. Halogen light bulbs last two to four times longer than standard incandescents.



**Task lighting systems** avoid the overlighting of an entire room by providing a low level of general lighting in a room, together with small fixtures shining directly on the "task."



**T-12 fluorescent lamps** with magnetic ballasts are standard fluorescent lamps that rely on magnetic ballasts, which provide proper voltage and current to fluorescent lamps. Although more efficient than incandescent lighting, they are older and less efficient than T-8 fluorescent lamps with electronic ballasts. A T-12 fluorescent lamp has a 1½-inch diameter.



**Incandescent ceiling fixtures** are ceiling fixtures for screw-in incandescent light bulbs.



**Incandescent exit signs** are traditional exit signs that use incandescent light bulbs.



**LED exit signs** use light-emitting diodes, such as those used in digital clock radios, to provide exit lighting. LED exit signs use about 5 percent of the electricity that incandescent exit signs use and last 10 to 20 times longer.

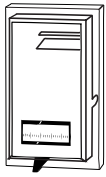


**T-8 fluorescent lamps** with electronic ballasts represent newer, more efficient technology than T-12s with magnetic ballasts. T-8 lamps use smaller diameters—1 inch—and improved phosphors and coatings to improve efficiency about 10 percent compared with standard T-12 lamps. These systems use about 30 percent less electricity than T-12s with magnetic ballasts.

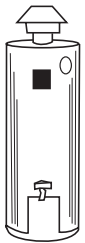
*It is recommended that you examine your purchase order records or confer with your supply purchasing agent to determine whether your building space is using T-8 or T-12 lamps.*

## Section 3: Heating-Related Equipment

*There are many different heating system components that could be used for your building space...*



**Manual Furnace Thermostats** are usually circular or rectangular units, normally attached to the wall of a room, and having a dial with temperature settings. To maintain the building space at a given temperature, move the thermostat dial so that the pointer is aimed at the temperature you desire.

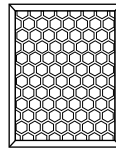


**Hot Water Heaters** are insulated tanks in which water is heated to a temperature set by the user. Water enters the tank through a pipe, is heated inside the tank by any number of energy sources, and is stored in the tank until it is used. Most are insulated by an inner lining, and they come in a variety of shapes and sizes.

**Hot Water Heater Temperature Thermostats** are rotary dials, usually on the base of the hot water heater, that control the temperature to which water is heated and maintained in the tank. These dials may have settings expressed in temperatures or in ranges (e.g., low, medium, high).

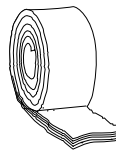


**Fan Belts** are rubber rings or other flexible devices that transfer power from a motor to a fan. Replacing worn belts and cleaning belts that get dirty will reduce the energy needed to operate the mechanisms they drive.

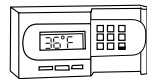


**Furnace Air Filters** are used in heating systems involving air flow through the furnace. Air entering the furnace passes through a filter that removes dirt and dust. Cleaning or replacing filters regularly will reduce the energy required to move air through the furnace and into the building space.

**Furnace Moving Parts** may include blower shaft bearings or other items requiring lubrication. Lubricate moving parts according to the manufacturer's recommendations in the furnace manual.



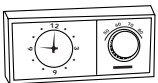
**Insulation for Hot Water Heater Pipes** and other exterior surfaces will reduce the heat lost. Rubber, fiberglass, or foam insulation is usually wrapped around these surfaces and secured with duct tape.



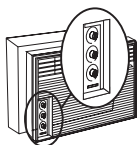
**Programmable Furnace Thermostats** are units, usually attached to the wall of a room, having a digital screen and a variety of buttons. These buttons allow you to program the thermostat to automatically raise and lower the temperature by time of day and even day of the week.

## Section 4: Cooling-Related Equipment

*There are many different cooling system components that could be used for your building space...*



**Manual Thermostats for Central Air-Conditioners** are usually circular or rectangular units, usually attached to the wall of a room, and having a dial with temperature settings. To maintain the building space at a given temperature, move the thermostat dial so that the pointer is aimed at the temperature you desire.



**Manual Settings for Window/Wall Air-Conditioners** are dials that allow you to raise or lower the cooling level of the unit. Most dials will switch between temperature ranges (e.g., 70°F-75°F and 75°F-80°F) or output level (e.g., low, medium, high).



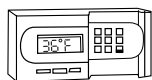
**Foam Air Filters** are often used in window/wall air-conditioning systems. Air entering the air-conditioner passes through a filter that removes dirt and dust. Cleaning or replacing filters regularly will reduce the energy required to move air through the unit and into the building space. For central air-conditioning system filters, see **Furnace Air Filters**.

**Air-Conditioner Moving Parts** include compressors and fan shafts and may also include a pump. Follow manufacturer's recommendations in the air-conditioner manual for the lubrication of parts and refrigerant recharging.



**Air-Conditioner Belts** are rubber rings or other flexible devices that transfer power from a motor to a fan. Replacing worn belts and cleaning belts that get dirty will reduce the energy needed to operate the mechanisms they drive.

## Section 4: Cooling-Related Equipment (continued)

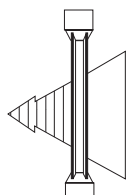


**Programmable Thermostats for Central Air-Conditioners** are units, usually attached to the wall of a room, having a digital screen and a variety of buttons. These buttons allow you to program the thermostat to automatically raise and lower the temperature by time of day and even day of the week.

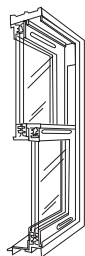


**Timers for Window/Wall Air-Conditioners** are timing devices that contain clips or other on/off markers on the timer's clock face that will switch the electricity on or off at the time of day for which the markers are selected.

## Section 5: Window and Door Equipment



**Single- and Double-Paned Glass.** The frames of windows or doors can have one, two, or even three panes of glass that act as layers. Having more panes reduces the transfer of heat through a window or door, holding heat in during the winter and keeping heat out during the summer.



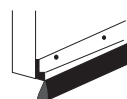
**Thermal Insulated and Wooden and Metal Window Frames.** Thermal insulated window frames have limited seams and joints and are designed to prevent the conduction of heat through the window when closed. Traditional window frames are made of wood or metal, which permit a greater amount of heat transfer than thermal insulated frames.

**Insulated Doors** have limited seams and joints and are designed to prevent the conduction of heat through the doorway when the door is closed.

**Entrances With Two Sets of Doors** are designed to provide an airlock between the interior building space and the exterior, since one set of doors is always closed.



**Insulation Strips** in the frame of a door or window (usually made of fiberglass) are used to prevent conduction of heat.



**Weather-Stripping** is felt, rubber, or other material that is attached to a door to prevent infiltration of air.



**Caulking** is pliable substance that is used to fill cracks or gaps around window or door frames to prevent infiltration of air.